28199
S/194/61/000/005/016/078
D201/D303

24.4100 1132, 1538, 1327, 1103

AUTHOR: Nitsetskiy, L.V.

TITLE: Electrical simulation of three-dimensional contact problems of the theory of elasticity

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1961, 17, abstract 3 B111 (Tr. 1-y Mezhvuz. nauchno-tekhn. Konferentsii po elektr. modelirovaniyu zadach stroi. mekhan. soprotivleniya materialov i teorii upru_osti. B.M., Novocherk. politekhn. in-t, 1960, 43-51)

TEXT: The problem of electrical simulation of three-dimensional contact problems is related to solving the concrete problem of pressure exerted by a die onto an elastic surface. The dimensions and shape of the die are assumed to be known, together with the pressure on the die (or its set) and the elasticity constant. The unknown are the set and pressure under the die, displacements and stresses

Card 1/2

28199
S/194/61/000/005/016/078
D201/D303

Electrical simulation...

at any point of the base. An electrolytic tank is suggested as the analogue. The elastic potential is proportional to the analogue electric potential satisfying the Laplace equation. The theory of the problem is given as well as the method of measuring the above-mentioned unknown quantities. Examples are given of the use of this method to determine the lines of equal pressure and of equal sets at the surface of an elastic base. The error of the analogue does not exceed 3-5%. 3 figures. 10 references. [Abstracter's note: Complete translation]

Card 2/2

32906

S/194/61/000/011/020/0[illegible]0
D209/D302

24.2400

AUTHOR: Nitsetskiy, L.V.

TITLE: The influence of finite dimensions of an electrolytic bath on accuracy of plotting the dipole type fields

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 11, 1961, 9, abstract 11 B56 (Uch. zap. Rizhsk. politekhn. in0t, 1960, 3, 107-118)

TEXT: Errors caused by plotting the infinite dipole type fields by means of electrolytic baths of finite dimensions are examined. It is shown that on placing a flat or a pointed dipole in the center of a round bath the field intensity can be determined as an arithmetical mean of the field intensity of the bath with conducting walls and of one with insulated walls. Expressions for the errors in plotting the field in a rectangular flat bath are given. In order to eliminate the distortion of the field due to finite dimensions of

Card 1/2

32906
S/194/61/000/011/020/070
D209/D302

The influence of finite dimensions...

the bath, application of flat, round baths and creation of an equivalent medium which extends beyond the walls of the bath, is recommended. 10 figures. 10 references. [Abstracter's note: Complete translation]

4

Card 2/2

S/169/62/000/006/019/093
D228/D304

AUTHORS: Nitsetskiy, L. B. and Fokin, A. F.

TITLE: Portable outfit for modelling two-dimensional geophysical problems

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 6, 1962, 21, abstract 6A146 (Uch. zap. Rizhsk. politekhn. in-t, 5, 1961, 15-23)

TEXT: It is proposed that special plotters of electrically conducting paper, divided by a dielectric, should be used for modelling two-dimensional geophysical problems. Usually the plotters are circular or semicircular. The upper and lower layers of the electrically conducting paper are stuck along the plotter's edges with special glue, guaranteeing an electric contact between them. The plotter's lower part is an orthomorphic reflection; this allows the modelling of an endless medium to be realized. The modelling of irregularities is accomplished by means of electrically conducting paper of requisite resistance or by means of electrically con-

Card 1/2

S/169/62/000/009/037/120
D228/D307

AUTHOR: Nitsetskiy, L. V.

TITLE: Electromodelling of gravity fields

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 9, 1962, 34-35, abstract 9A229 (Uch. zap. Rizhsk. politekhn. in-t, 1961, 49-55)

TEXT: Electromodelling of gravity fields can be accomplished on the grounds of analogies between gravitational and electric potentials or on the grounds of analogies between the gravitational potential's derivative and the potential of the accordingly disposed electric dipole. In the first case the surplus masses are imitated by currents in the model's elementary volumes. In the second they are imitated by currents at the interfaces of media with different densities. A method of replacing the volume distribution of sources by a surface distribution and the elimination of the volume, whose field is readily reckoned analytically, are proposed

Card 1/2

S/169/62/000/009/037/120
D228/D307

Electromodelling of gravity ...

in order to decrease the number of the current's leads. [Abstracter's note: Complete translation.]

Card 2/2

S/271/63/000/003/024/049
A060/A126

AUTHOR: Nitsetskiy, L.V.

TITLE: Effect of bounded dimensions of the simulator on the precision of simulation of the Laplace equation in an infinitely extended field

PERIODICAL: Referativnyy zhurnal, Avtomatika, telemekhanika i vychislitel'naya tekhnika, no. 3, 1963, 7, abstract 3B36 (Dokl. 4-y Mezhvuz. konferentsii po primeneniyu fiz. i matem. modelirovaniya v razlichn. otraslyakh tekhn. Sb. 1, Moscow, 1962, 145 - 153)

TEXT: Recommendations are given for determining errors arising on account of the finite dimensions of simulators in simulating infinitely extended fields which make it possible to estimate various configurations of the selection of scales of the simulator in design and to enter corrections into the results of simulation. The principle of error estimation consists in representing the potential φ actually measured on the simulator by the sum $\varphi = \varphi_0 + u$, where φ_0 is the potential corresponding to the known simulated field under conditions of an infinitely extended medium, and u is the potential of deviations

Card 1/2

S/271/63/000/003/024/049
A060/A126

Effect of bounded dimensions of the simulator ....

characterizing the errors arising on account of the finite dimensions of the simulator. The deviation potential is determined from the solution of the Laplace equation $\Delta u = 0$ with boundary conditions on the surface (contour) having one of the following forms: $u_\Gamma = -\varphi_{0\Gamma}$ corresponding to an ideally conducting realization of the simulator boundary, or $\frac{du}{dn}\Big|_\Gamma = -\frac{d\varphi_0}{dn}\Big|_\Gamma$ corresponding to an isolating boundary. Expressions are cited for the errors in the cases of solving: the fundamental problem for circular simulators and idealized sources, for truncation of an infinite strip, for simulation of infinite homogeneous fields.

G. G.

[Abstracter's note: Complete translation]

Card 2/2

NITSETSKIY, L.V.

Simplified extensions of circular models for the solution of Laplace's equation in infinite regions. Mat. mod. i elek. tsepi no.1:136-146 '63. (MIRA 16:11)

ACC NR: AR6018965 SOURCE CODE: UR/0271/66/000/002/B002/B003

AUTHOR: Mitsetskiy, L. V.

TITLE: Analog and difference methods for the solution of external boundary value problems

SOURCE: Ref. zh. Avtomat telemekh i vychisl tekhn, Abs. 2B16

REF SOURCE: Uch. zap. Rizhsk. politechn. in-ta, v. 12, 1965, 5-430

TOPIC TAGS: boundary value problem, Laplace equation, ferrite, magnetic pumping, difference method

TRANSLATION: The monograph is devoted to methods for the solution of Laplace equations in unbounded regions; it contains a brief formulation of the general statement of the problem, an evaluation of the effect of the bounded region's dimensions on the accuracy of the external boundary value problem solution for different variations of the region's boundary (shapes) and a survey of the methods for modeling unbounded regions. The possibility and techniques for applying coordinate transformation of the total region or that of the most remote portion with preservation of access to the points of the reflected region, and the possibility of applying extensions for the conversion of the remote portion of the region without access to individual points is investigated. The analysis of the possible solutions to the external boundary value problem is il-

UDC: 681.142.33.001

Card 1/2

ACC NR: AR6018965

lustrated with a large number of examples of solutions for practical problems, e. g., the computation of grounding resistances, investigation of high frequency heating, determination of magnetic parameters of ferrite components, investigation of magnetic pumping, and problems of elasticity. A series of analog models for the solution of problems in geophysical prospecting is described. 217 figures, 167 references. I. V.

SUB CODE: 12,08 20

Card 2/2

NITSETSKIY, V.V., aspirant.

Calculation of plane meridional electric fields in some anisotropic media. Trudy MEI no.18:70-82 '56. (MLRA 10:1)

1. Kafedra teoreticheskikh osnov elektrotekhniki)
(Electric fields)

NITSETSKIY, V. V. Cand Tech Sci -- (diss) "Spatial reflections in the modeling of potential fields in electrolytic baths." Mos, 1957. 11 pp (Min of Higher Education USSR. Mos Order of Lenin Power Engineering Inst. Chair of Theoretical Bases of Electrical Engineering), 100 copies (KL, 45-57, 98)

NITSETSKIY, V. V.

CALCULATIONS: GRAPHIC METHODS

"Application of Image Theory in the Simulation of Electromagnetic Fields", by Engineer V.V. Nitsetskiy, Izvestiya (Bulletin) of the Academy of Sciences Latvian SSR, No 6, (119) 1957, pp 87-94.

Discussion of geometric mapping whereby an anisotropic inhomogeneous medium can be replaced by a solid isotropic and homogeneous medium, provided certain conditions relative to the field and to the metric elements are satisfied. It is shown how a combination of an electrolytic bath and a grid integrator almost completely eliminates the distortion due to the walls of the electrolytic bath in the simulation of fields extending to infinity.

Card 1/1

AUTHOR: Nitsetskiy, Vil'gel'm Vil'yevich, SOV/ 161-58-1-6/33
Candidate of Technical Sciences, Assistant at the Latvian State University

TITLE: Optimal Shape of Rounded Electrodes (Optimal'nyye formy zakrugleniya krayev elektrodov)

PERIODICAL: Nauchnyye doklady vysshey shkoly, Elektromekhanika i avtomatika, 1958, Nr 1, pp. 29 - 37 (USSR)

ABSTRACT:

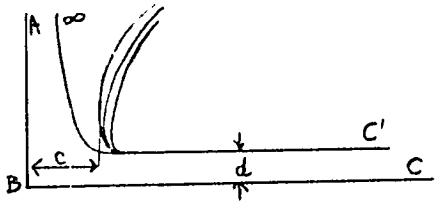

Figure 5

This investigation was conducted at the Institute of Power Engineering under the supervision of Professor A.V.Netushil. The known analysis of the field of a Maxwell (Maksvell) condenser is not applicable in some cases, for example in an arrangement of the electrodes, which is used in the transverse high-frequency heating of dielectric cylinders. In this case

Card 1/3

$\varepsilon \gg 1$ is assumed in order to determine the shape of the rounded electrode. The whole system is assumed to be plane-parallel and therefore the side surfaces of the cylinder are rectified. When the problem is idealized in such a manner it is useful to apply the principle underlying the method of securing a sufficient electric strength at the edges of a Maxwell condenser. This principle reads as follows: The rounded electrode is produced in a shape, which is closest to the fundamental shape of the electrode following an equi-potential surface. Then the electric strength is investigated at the edge of the plates within a right angle. Hence it appears, that c should not be taken below 1,82 d and the rounding of the electrode edges in the danger zone is to be taken according to the curves in figure 5 or according to formula (9). The optimum radius of curvature is considerably smaller than in the case with the Maxwell condenser. The next section deals with the optimum shape of rounded electrodes in the high-frequency heating of dielectric cylinders. Figure 7 contains the dimensions of the design of the recommended electrode shape. When the dielectric constant of the heated material is not very high, it is expedient to use an air gap, which is not

Optimal Shape of Rounded Electrodes SOV/161-58-1-6/33

constant along the circumference, but which increases towards the edges. The publication of this article was recommended by the Chair of Theoretical Foundations of Electrical Engineering at the Moscow Institute of Power Engineering (Kafedra teoreticheskikh osnov elektrotekhniki Moskovskogo energeticheskogo instituta). There are 9 figures and 4 references, 1 of which is Soviet.

ASSOCIATION: Latviyskiy gosudarstvennyy universitet (Latvian State University)

SUBMITTED: December 19, 1957

Card 3/3

NETUSHIL, A.V., prof. doktor tekhn.nauk; NITSETSKIY, V.V., insh.

Investigating the ground-connection resistance of a system of cylindrical electrodes by means of models. Izv. vys. ucheb. zav.; elektromekh. no.1:99-106 '58. (MIRA 11:6)

1.Moskovskiy energeticheskiy institut.
(Electric currents--Grounding)

8(2)

AUTHOR: Nitsetskiy, Vil'gel'm Vil'yevich, SOV/161-58-2-5/30
Candidate of Technical Sciences at the Latvian State University

TITLE: Analogue of a Two-Laminate Electrolytic Bath Made of Electrically Conducting Paper (Analog dvukhsloynoy elektroliticheskoy vanny iz elektroprovodyashchey bumagi)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Elektromekhanika i avtomatika, 1958, Nr 2, pp 40 - 45 (USSR)

ABSTRACT: Electrolytic tanks and models of electrically conducting paper show the same behavior and differ only in regard to the conducting material. For this reason, the application of electrolytic tanks with conformally transformed boundaries can be extended to models of electrically conducting paper. In this connection, the author developed in analogy with a two-laminate electrolytic bath, a model of electrically conducting paper for representing plane parallel fields in regions extending to infinity. The model consists of two conductive plates that are joined on the rims by means of metal clamps or an adhesive material but are insulated from each other for all the rest of the surfaces. The model was used for the

Card 1/3

Analogue of a Two-Laminate Electrolytic Bath Made of Electrically Conducting Paper SOV/161-58-2-5/30

representation of a field at high-frequency heating of dielectric cylinders. The model was inserted into the test circuit in accordance with the dual system of electric analogy (equipotential lines and lines of force interchange their positions). By unification of the field with the inverse field the real field of the system: electrodes - air - cylinders was obtained. (Fig 6). The corresponding representation of the equipotential lines and of the lines of force in the real plane is shown in figure 8. By comparison of the figures 6 and 8 it is to be seen that diminishing the dielectric constant of the material to be heated causes an increase in the heterogeneity of the field in the air-gap and within the cylinder. For small $\varepsilon_{cylinder}$ values it is, therefore, advisable not to choose a constant value for the air-gap but to let it increase towards the boundaries. The work was conducted by

Card 2/3

Analogue of a Two-Laminate Electrolytic Bath Made of Electrically Conducting Paper SOV/161-58-2-5/30

Professor A. V. Netushil. There are 8 figures and 8 references, 6 of which are Soviet.

ASSOCIATION: Kafedra teoreticheskikh osnov elektrotekhniki Moskovskogo energeticheskogo instituta (Chair for Theoretical Principles of Electrical Engineering of the Moscow Power Engineering Institute)

SUBMITTED: December 19, 1957

Card 3/3

HITSENTSKIY, V.V., aspirant

Numerical calculation of the electric field of cylindrical electrodes of finite length. Trudy MEI no.27:164-178 '58. (MIRA 13:4)

(Electric fields) (Electrodes)

L 8146-66 EWT(m)/EWP(b)/EWP(t IJP(c) JD/JG/JW

ACC NR: AP5027208 SOURCE CODE: UR/0078/65/010/011/2477/2483

AUTHOR: Fridman, Ya. D.; Moshkina, V. A.; Gorokhov, S. D.; Nitsevich, E. A.

ORG: None

TITLE: Formation and thermal decomposition of yttrium fluoride and carbonate

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 11, 1965, 2477-2483

TOPIC TAGS: fluoride, carbonate, yttrium compound, thermal decomposition, sodium compound

ABSTRACT: A study was made of the reaction of yttrium fluoride with sodium carbonate in the temperature interval from 150 to 900 C, and of the thermal decomposition of yttrium fluoride and carbonate. The reaction was studied by thermogravimetric and thermographic methods. In the thermogravimetric investigations, weighed amounts of the salts were mixed in a platinum crucible and held in a muffle furnace at a given temperature to constant weight (from 15 to 25 hrs). The decomposition products were analyzed and their composition determined. The thermographic investigations were made in a Kurnakov pyrometer using platinum-platinum rhodium thermocouples. Weighed portions of the salts

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(0.5-1.0 grams) were mixed in a sliver crucible into which the junctions of the thermocouples were inserted directly. The heating time to the maximum temperature was 3-5 hours. Results showed that yttrium carbonate dissociates in the temperature interval 155-700 C according to the following scheme:

$$Y_2(CO_3)_3 \cdot 3H_2O \xrightarrow{155^\circ C} Y_2(CO_3)_3 \xrightarrow{250-400^\circ C} Y_2O_3 \cdot 0{,}2CO_2 \xrightarrow{600-700^\circ C} Y_2O_3$$

Yttrium fluoride dissociates in the temperature interval 450-800 C according to the scheme:

$$YF_3 \xrightarrow{450-650^\circ C} YOF \xrightarrow{650-800^\circ C} Y_2O_3$$

with the formation of intermediate products. Results of the reaction of yttrium fluoride with sodium carbonate permit the deduction that in the temperature interval 550-700 C the reaction in the system corresponds to the overall equation:

$$2YF_3 + 3Na_2CO_3 = Y_2O_3 + 6NaF + 3CO_2$$

L 8146-66

ACC NR: AP5027208 O

In the temperature interval 800-850 C, with an excess of sodium carbonate, Na_2CO_3 reacts with yttrium oxide with the probable formation of compounds with the composition $NaYO_2$. Orig. art. has: 10 figures and 5 tables.

SUB CODE: GC, IC/ SUBM DATE: 21Apr64/ ORIG REF: 008/ OTH REF: 003

jw

Card 3/3

NITSEVICH, V.S. [Nitsevych, V.S.], traktorist (selo Maydan Verbetskiy, Letichevskogo rayona, Khmel'nitskoy oblasti).

How to prevent the waste of oil and fuel. Mekh.sil'.hosp. 11 no.2:9 F '60. (MIRA 13:6)
(Tractors--Fuel consumption) (Tractors--Lubrication)

ACCESSION NR: AP4030643 S/0048/64/028/004/0681/0682

AUTHOR: Merts, V.I.; Nitsho, R.

TITLE: Ferroelectricity in SbSI and other compounds of Group V, VI and VII elements [Report, Symposium on Ferromagnetism and Ferroelectricity held in Leningrad 30 May to 5 June 1963]

SOURCE: AN SSSR. Izv. Ser.fiz., v.28, no.4, 1964, 681-682

TOPIC TAGS: SbSI, ferroelectricity, photoconductivity, photoconductivity sensitivity maximum, absorption edge shift, piezoelectricity, dielectric constant temperature dependence, spontaneous polarization temperature dependence, coercive field, first order ferroelectric transition, super Curie point hysteresis, double hysteresis loop, polarization switching

ABSTRACT: A number of properties of SbSI are reported. Some of them are remarkable. The material crystalizes in long needles with cleavage planes parall l to the long (c) axis. It is both photoconductive and ferroelectric. The maximum photoconductive sensitivity occurs at about 6350 Å. The temperature coefficient of the energy gap is extraordinarily great (0.0015 eV/°C). When an electric field is applied parallel to

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ACCESSION NR: AP4030643

the c axis, the crystal expands in this direction and the absorption edge shifts to shorter wavelengths. The absorption edge displacement is much greater than and in the opposite direction from what would be expected on the basis of the Franz-Keldysh effect (W.Franz, Z.Naturforsch.,13,484,1958; L.V.Keldysh,Zhur.eksp.i teor.fiz.,34, 1138,1958). The material has a ferroelectric Curie point at 22°C. No relaxation was observed at frequencies up to 10^5 cycles/sec. The dielectric constant parallel to the c axis is 50 000 at the Curie point. The temperature dependence of the dielectric constant is typical. At 0°C the spontaneous polarization is 25 microcoulombs/cm^2 and the coercive field is 100 V/cm. The square of the spontaneous polarization is a linear function of the temperature. Although there are many indications that the ferroelectric transition is first order, no double hysteresis loops were observed above the Curie point. The polarization reversal time is 3 microsec at 1400 V/cm and is approximately inversely proportional to the cube of the field for fields between 70 and 1400 V/cm. Orig.art.has: 2 formulas.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 30Apr64 ENCL: 00

SUB CODE: EM NR REF SOV: 001 OTHER: 002

Card2/2

GELLER, S.Yu.; GERASIMOV, I.P.; KAMANIN, L.G.; KES', A.S.; KINITSYN, L.F.; MURZAYEV, E.M.; NITSHKAUT, M.I.; NEFED'YEVA, Ye.A.; NIKOL'SKAYA, V.V.; PREOBRAZHENSKIY, V.S.; RIKHTER, G.D.; ROSSOLIMO, L.L.; SIL'VESTROV, S.I.

David L'vovich Armand's 60th birthday (1905-). Izv. AN SSSR. Ser. geog. no.6:141-142 N-D '65. (MIRA 18:11)

NITSKANSKIY, S. G. Cand Biol Sci -- (diss) "The Status of Pisciculture in the Nominal Flood-Water Reservoirs of the Prut River, and Ways of Improving It." Kishinev, 1957. 16 pp 21 cm. (Odessa State Univ im I. I. Mechnikov), 100 copies (KL, 19-57, 86)

NITSKANSKIY, S.G., kand. biol.nauk; SOKOLAN, A., red.; GORYACHENKO, F., tekhn. red.

[Use of cybernetics in natural sciences]Primenenie kibernetiki v estestvoznanii. Kishinev, Izd-vo sel'khoz.lit-ry, 1962. 40 p. (MIRA 15:9)

(Cybernetics) (Science)

16.4100

29831
S/042/61/016/005/003/005
C111/C444

AUTHORS: Korolynk, V. S., Nitskaya, E. R.

TITLE: Note on the algorithm for the construction of the boundary layer

PERIODICAL: Uspekhi matematicheskikh nauk, V. 16, no. 5, 1961, 171 - 176

TEXT: Let L_ε and L_k be linear differential operators

$$L_k u \equiv \sum_{j=0}^{k} a_j(x) \frac{d^j u}{dx^j}, \quad a_k(x) \not\equiv 0 \text{ for } x \in [0, 1], \quad (1)$$

$$L_\varepsilon u \equiv L_k u + \sum_{r=1}^{l} \varepsilon^r a_{k+r}(x) \frac{d^{k+r} u}{dx^{k+r}}, \quad a_{k+r}(x) \not\equiv 0 \text{ for } x \in [0, 1], \quad \varepsilon > 0. \quad (2)$$

Searched is the solution of the equation

$$L_\varepsilon u_\varepsilon(x) = u(x)$$

with the main boundary conditions

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C111/C444

Note on the algorithm ...

$$\left.\frac{d^i u_\varepsilon}{dx^i}\right|_{x=0} = 0 \qquad (i = 0, 1, \ldots, k_0 - 1), \tag{3}$$

$$\left.\frac{d^j u_\varepsilon}{dx^j}\right|_{x=1} = 0 \qquad (j = 0, 1, \ldots, k_1 - 1; \quad k_1 = k - k_0) \tag{3'}$$

and the additional conditions

$$\left.\frac{d^{k_0+r} u_\varepsilon}{dx^{k_0+r}}\right|_{x=0} = 0 \qquad (r = 0, 1, \ldots, l_0 - 1), \tag{4}$$

$$\left.\frac{d^{k_1+s} u_\varepsilon}{dx^{k_1+s}}\right|_{x=1} = 0 \qquad (s = 0, 1, \ldots, l_1 - 1; \quad l_1 = l - l_0). \tag{4'}$$

M. I. Vishlik and L. A. Lyusternik (Ref: Regulyarnoye vyrozhdeniye i pogranichnyy sloy dlya lineynykh differentsial'nykh uravneniy s malym parametrom [Regular degeneration and boundary layer for linear differential equations with small parameter] UMN 12, vyp. 5 (77) (1957))

Card 2/3

Card 3/3

1. BROFEEV, B. V., NITSKEVICH, N. I.

2. USSR (600)

4. Chemical Reaction - Mechanism

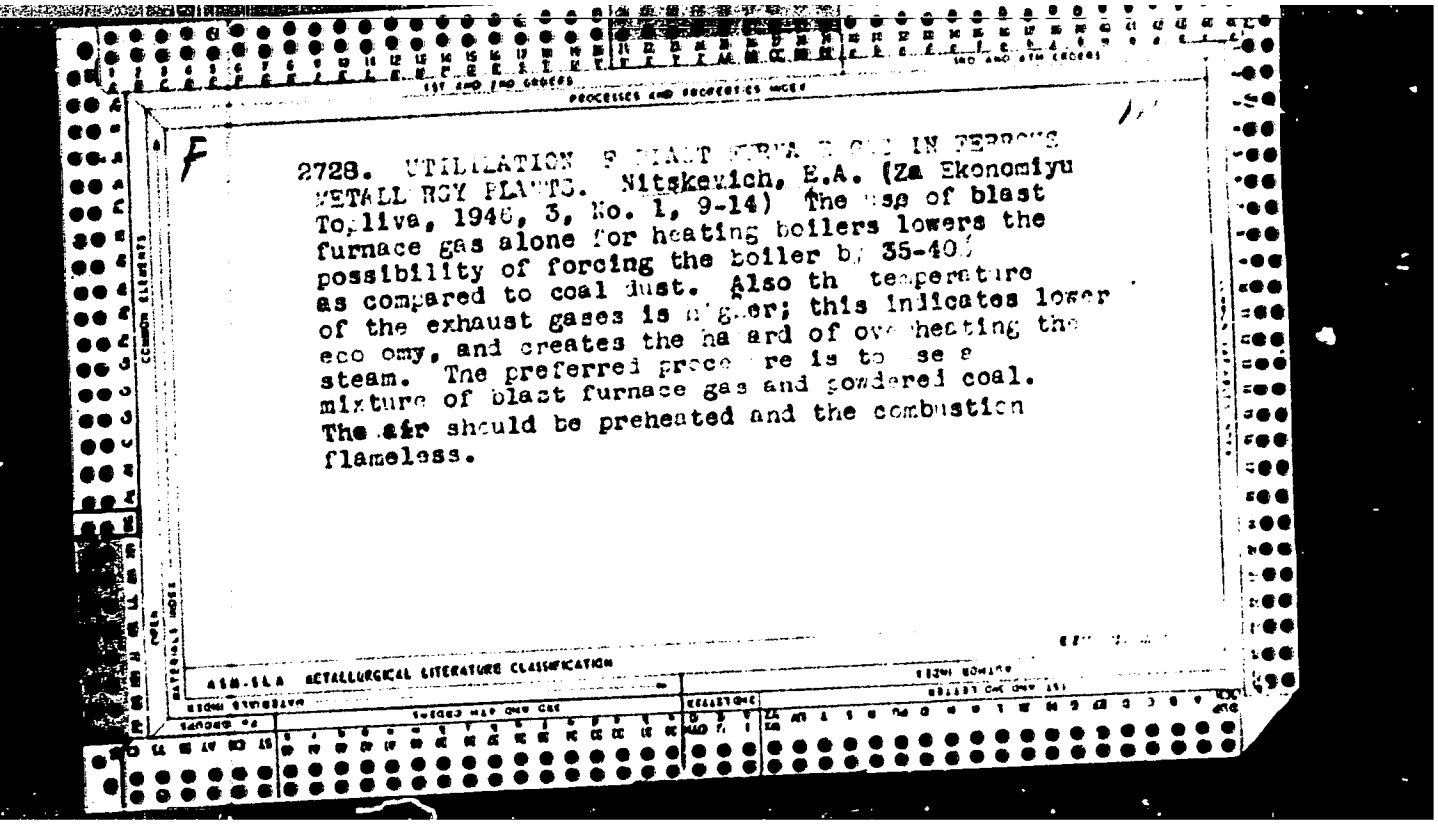
7. Kinetics of transformations of polymorphic modifications of ammonium nitrate. Part 4. Transformation of NH_4NO_3 (III) $\rightleftarrows$ NH_4NO_3 (II), Zhur. fiz. khim. 27, no. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

LAZAREV, L.Ya., kand. tekhn. nauk; NITSKEVICH, V.P., inzh.

Study of the effect of compressibility and viscosity on the aerodynamic characteristics of turbine lattices. Teploenergetika 12 no.7:51-54 Jl '65. (MIRA 18:7)

1. Moskovskiy energeticheskiy institut.



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2728. UTILIZATION [illegible] IN FERROUS METALLURGY PLANTS. Nitskevich, E.A. (Za Ekonomiyu Topliva, 1948, 3, No. 1, 9-14) The use of blast furnace gas alone for heating boilers lowers the possibility of forcing the boiler by 35-40% as compared to coal dust. Also the temperature of the exhaust gases is higher; this indicates lower economy, and creates the hazard of overheating the steam. The preferred procedure is to use a mixture of blast furnace gas and powdered coal. The air should be preheated and the combustion flameless.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

NITSKEVICH, E.A.

The utilization of shaft furnaces in the ferrous metallurgical industry. Moskva, Gos. nauch.-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1947. 151 p. (49-14334)

TP320.N6

NITSKEVISH, YE. A.

Sep 1947

USSR/Engineering
Boilers
Blowers

"Blowers for Boiler Works," Ye. A. Nitskevich, 6 pp

"Za Ekonomiyu Topliva" Vol IV, No 9

The article deals with location of blowers and type of blower construction which can be used in various types of furnaces. Some of these constructions are illustrated. Some of the conclusions are that two blowers are necessary in boilers which generate an excess of 15 tons per hour (of hot water), the temperature of compounds coming out of the shaft must be between 125° and 130° C for coal and 60° and 75° C for other types of fuel.

23T27

NITSKEVICH, YE. A., Engr PA 35/49T40

USSR/Engineering Sep 48
Fuel Conservation
Heating, Industrial

"Heat Utilization and Automatic Regulation of Heating Processes in the Metallurgical Industry," Ye. A. Nitskevich, Engr, 5 pp

"Za Ekonomiyu Topliva" No 9

Details metallurgical industry's accomplishments in fuel conservation for 1947. Absolute expenditure of fuel rose only 6% compared with 1946, with 9% production rise in steel, 15.8% rise in rolled iron, 20% increase in pipes, and 12.5% increase in refractories.

35/49T40

PA 44/49T49

NITSKEVICH E. A.

USSR/Engineering Mar 49
Power Supplies
Metallurgical Plants

"Utilization of Secondary Power Resources in Metallurgical Enterprises," E. A. Nitskevich, Engr, Min of Metal Ind USSR, 4 pp

"Prom Energet" No 3

Treats under: (1) heat balance of (a) ferrous and (b) nonferrous metallurgy plants and significance of secondary power resources, (2) position and prospects of utilizing physical heat at metallurgical plants, and (3) conclusions and tasks. Includes four tables.

44/49T49

NITSKEVICH, Ye. A.

58/49T54

USSR/Engineering
Boilers
Furnaces

Jun 49

"The Combustion of Waste Products of Coal Enrichment in Shaft Mill Furnaces," Ye. A. Nitskevich, Engr, B. A. Dem'yanyuk, 5 pp

"Za Ekon Top" No 6

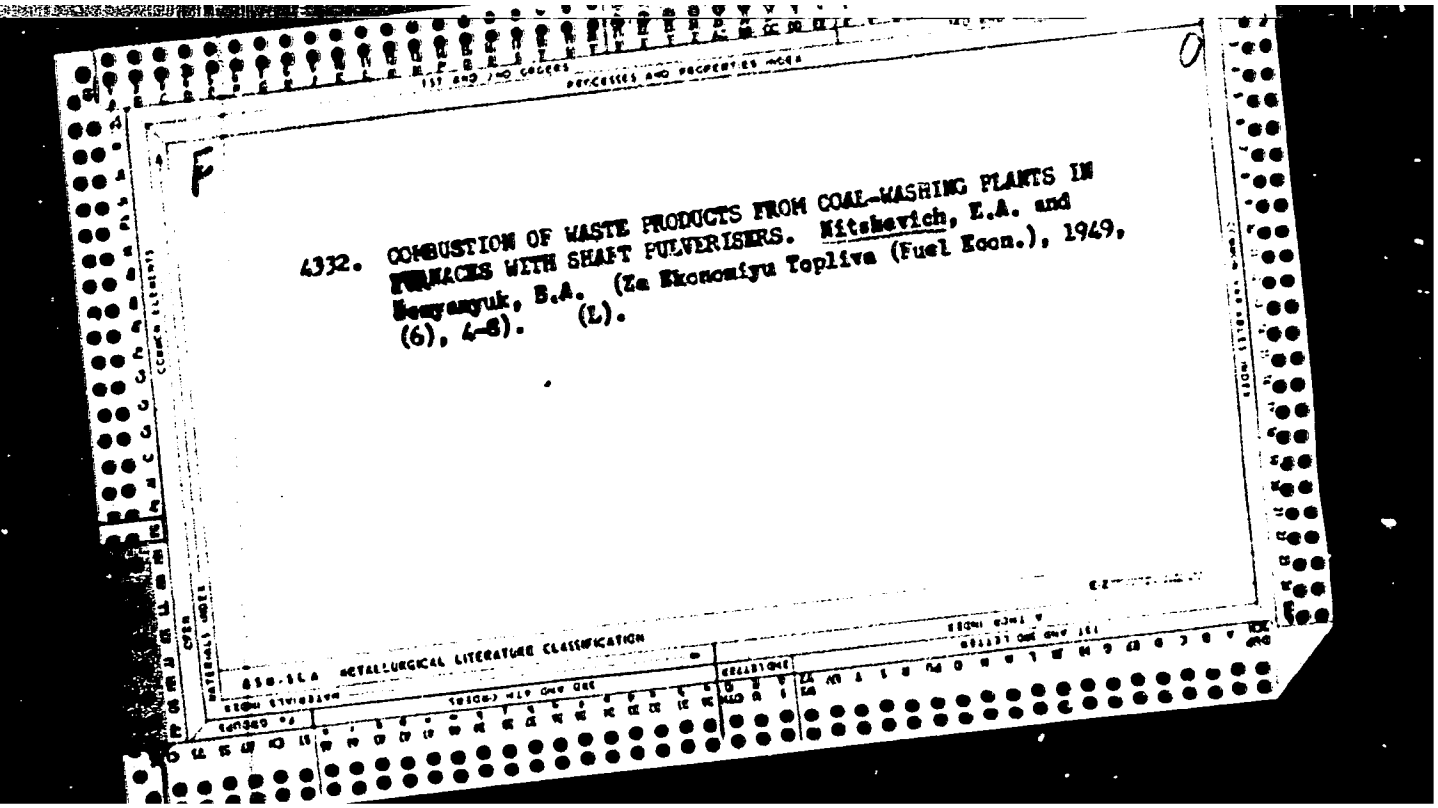
Among conditions found for combustion were: a milling fineness equal to that of the residue in a No 70 sieve; temperature of the drying agent not to exceed 400°C; and screening of the chamber calculated with allowance

[redacted] 58/49T54

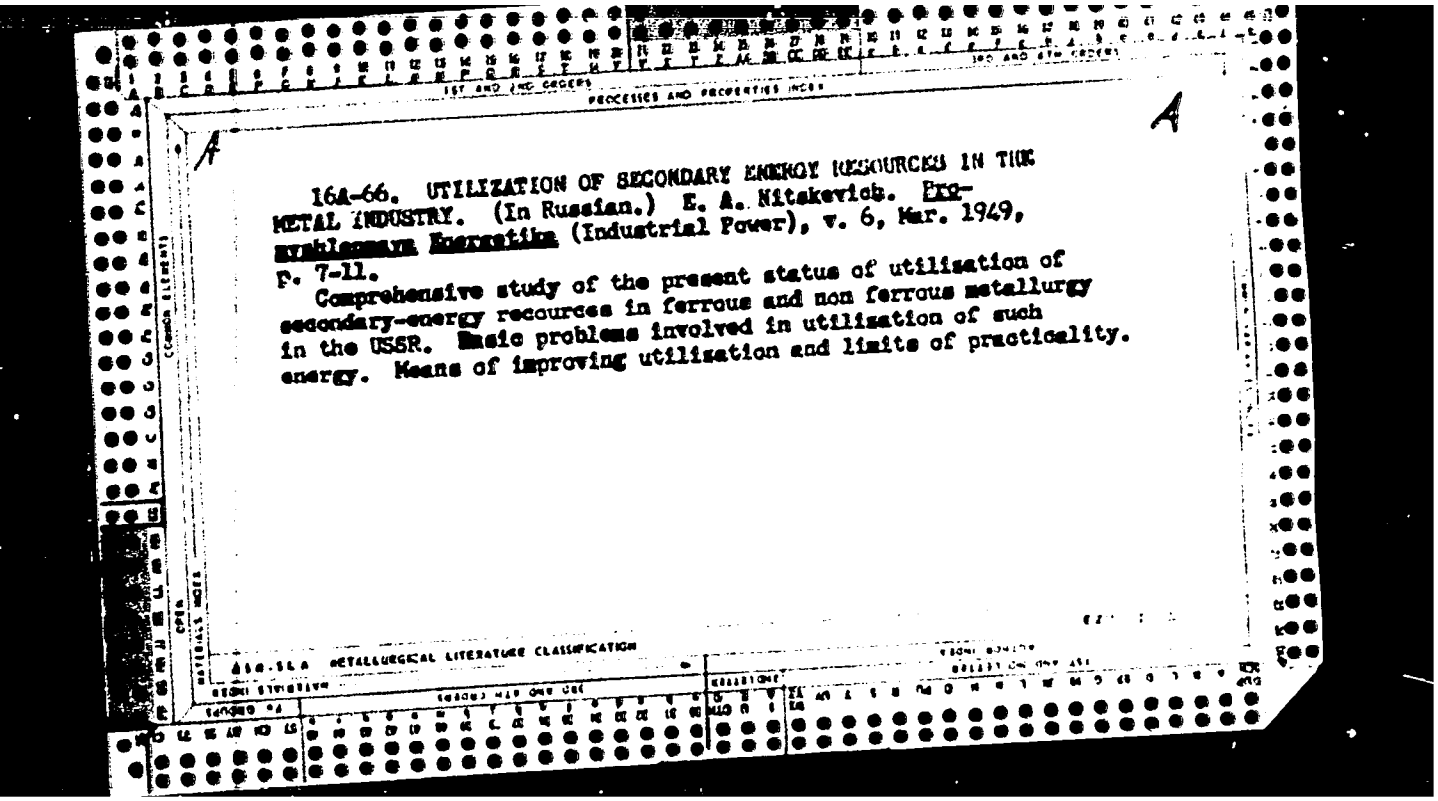
USSR/Engineering (Contd) Jun 49

for providing a temperature of 1,050 to 1,100° C in front of the first row of boiler pipes.

[redacted] 58/49T54



4332. COMBUSTION OF WASTE PRODUCTS FROM COAL-WASHING PLANTS IN FURNACES WITH SHAFT PULVERISERS. Mitshevich, E.A. and Semyanyuk, B.A. (Za Ekonomiyu Topliva (Fuel Econ.), 1949, (6), 4-8). (L).



16A-66. UTILIZATION OF SECONDARY ENERGY RESOURCES IN THE METAL INDUSTRY. (In Russian.) E. A. Nitskevich. Promyshlennaya Energetika (Industrial Power), v. 6, Mar. 1949, p. 7-11.

Comprehensive study of the present status of utilization of secondary-energy recources in ferrous and non ferrous metallurgy in the USSR. Basic problems involved in utilization of such energy. Means of improving utilization and limits of practicality.

NITSKEVICH, YE. A.

33151

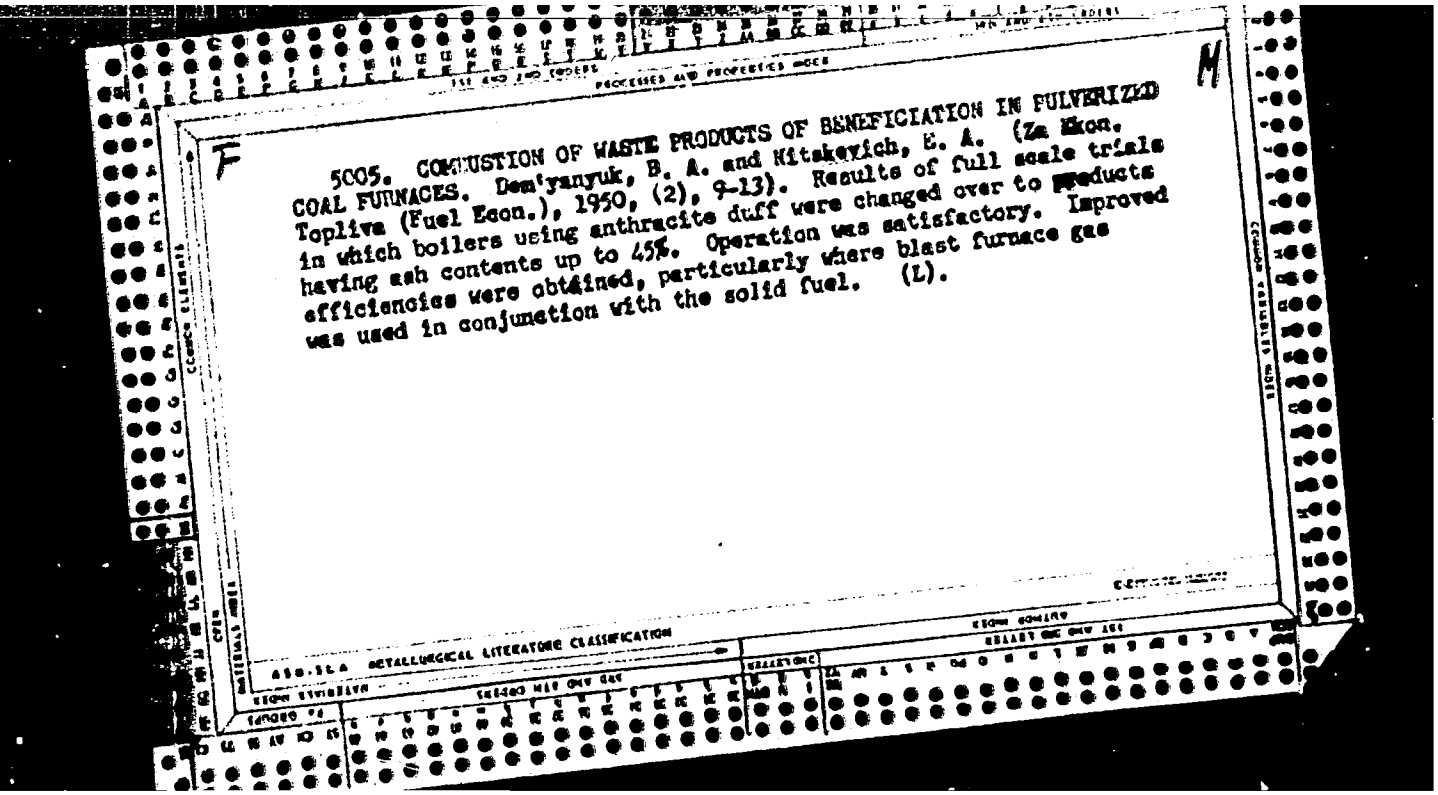
Zamena Mazuta Ugol'noy Pyl'yu Dlya Otopleniya Metallurgicheskikh Pechey. Za Ekonomiyu Topliva, 1949, No 10, c. 3-9

SO: Letopis' Zhurnal'nykh Statey, Vol. 45, Moskva, 1949

NITSKEVICH, YE. A.

36163 Ratsionalizatsiya toplivoispol'zovaniya v prokatnykh tsekhakh metallurgicheskikh predpriyatiy. (Po materialam Soveshchaniya energetikov metallurg. prom-sti. Iyun' 1949 g.) Za ekonomiyu topliva, 1949, No. 11, S. 25-30.

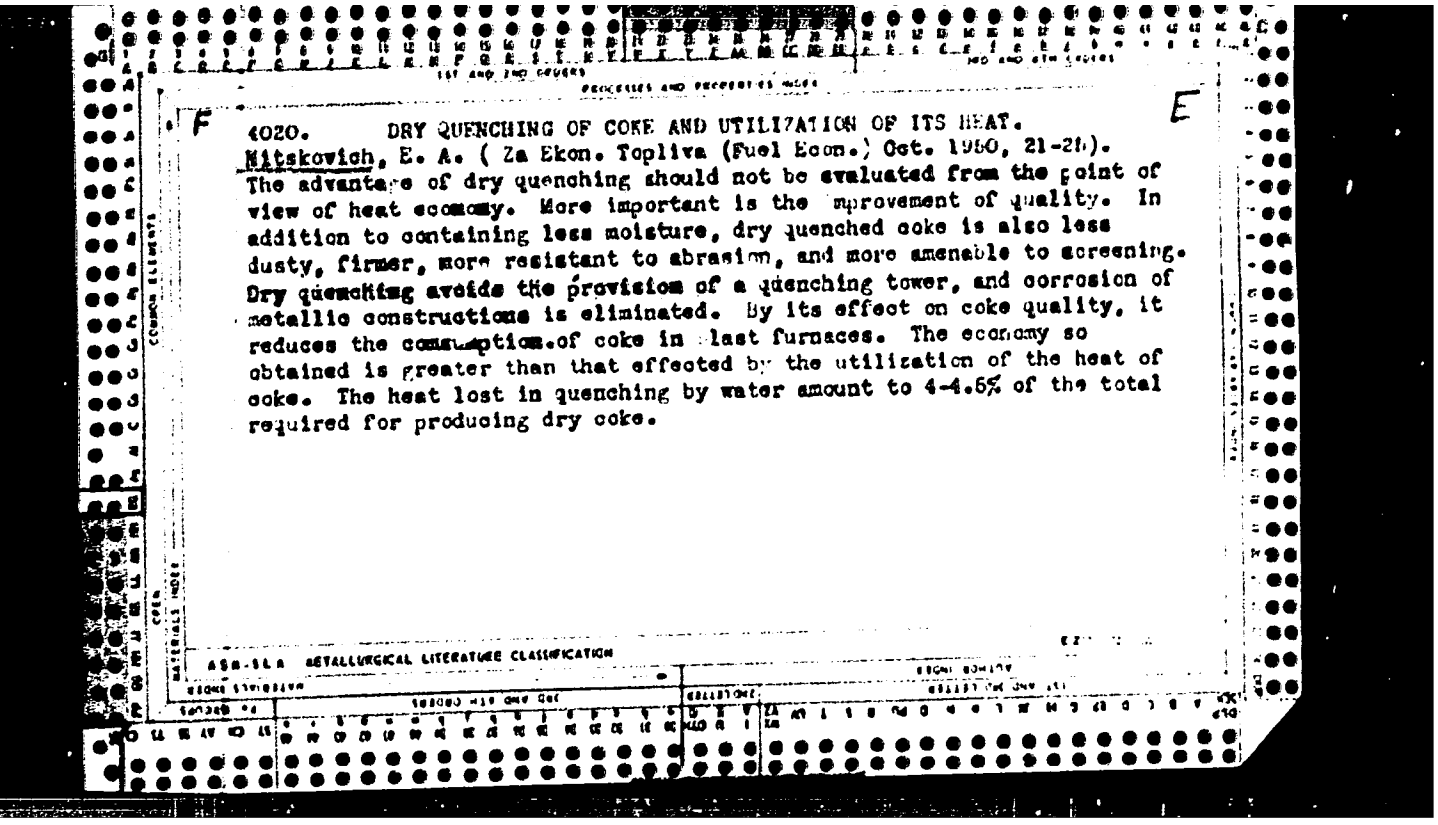
SO: Letopis' Zhurnal'nykh Statey, No. 49, 1949



F

5005. COMBUSTION OF WASTE PRODUCTS OF BENEFICIATION IN PULVERIZED COAL FURNACES. Dem'yanyuk, B. A. and Nitskevich, E. A. (Za Ekon. Topliva (Fuel Econ.), 1950, (2), 9-13). Results of full scale trials in which boilers using anthracite duff were changed over to products having ash contents up to 45%. Operation was satisfactory. Improved efficiencies were obtained, particularly where blast furnace gas was used in conjunction with the solid fuel. (L).

M



F

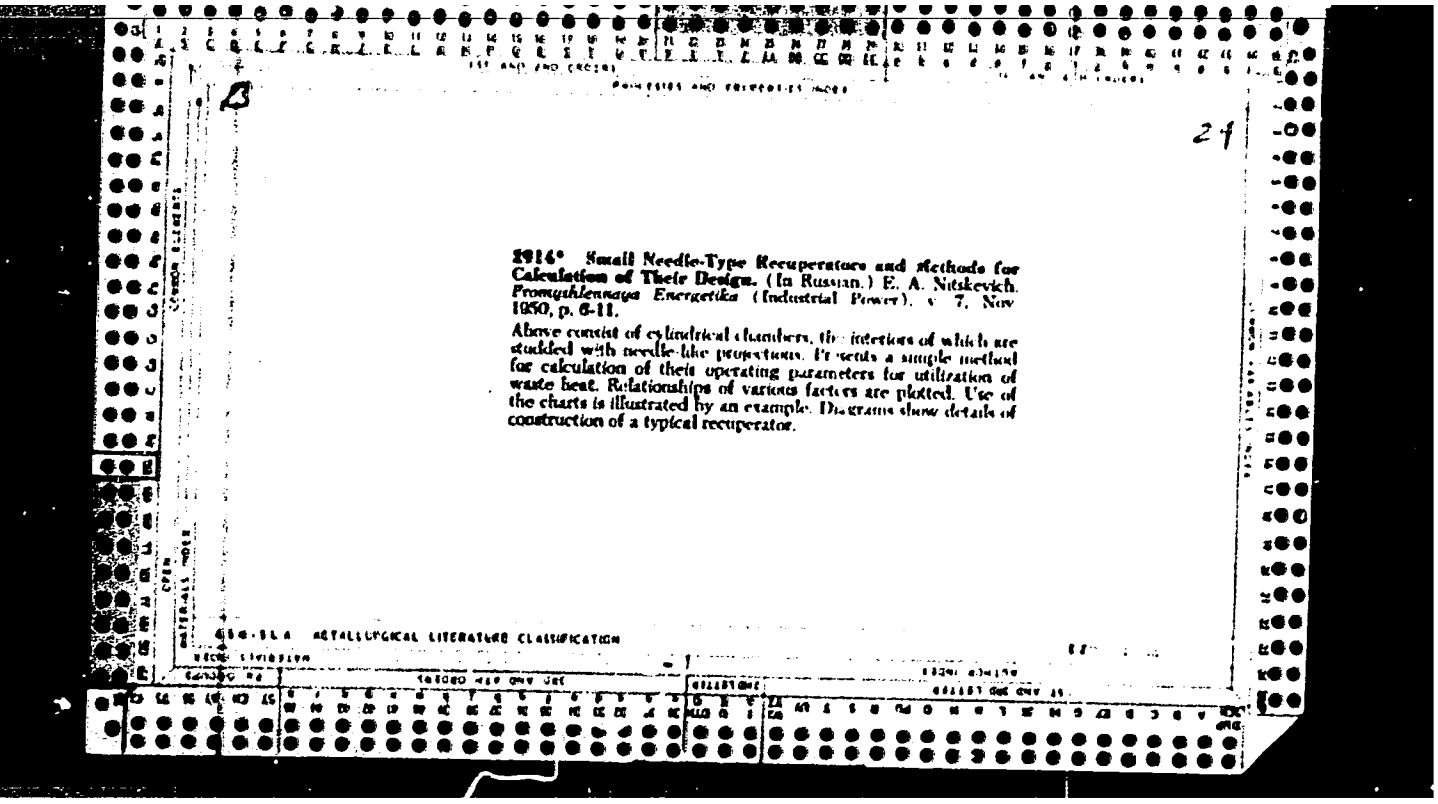
4020. DRY QUENCHING OF COKE AND UTILIZATION OF ITS HEAT.

Nitskovich, E. A. (Za Ekon. Topliva (Fuel Econ.) Oct. 1950, 21-28).

The advantage of dry quenching should not be evaluated from the point of view of heat economy. More important is the improvement of quality. In addition to containing less moisture, dry quenched coke is also less dusty, firmer, more resistant to abrasion, and more amenable to screening. Dry quenching avoids the provision of a quenching tower, and corrosion of metallic constructions is eliminated. By its effect on coke quality, it reduces the consumption of coke in last furnaces. The economy so obtained is greater than that effected by the utilization of the heat of coke. The heat lost in quenching by water amount to 4-4.6% of the total required for producing dry coke.

E

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



2916* Small Needle-Type Recuperators and Methods for Calculation of Their Design. (In Russian.) E. A. Nitskevich. *Promyshlennaya Energetika* (Industrial Power), v. 7, Nov 1950, p. 6-11.

Above consist of cylindrical chambers, the interiors of which are studded with needle-like projections. It sets a simple method for calculation of their operating parameters for utilization of waste heat. Relationships of various factors are plotted. Use of the charts is illustrated by an example. Diagrams show details of construction of a typical recuperator.

[illegible]TEYICH, Ye. L.

Technology

Design of boiler units of small and medium capacity. Moskva, Gos. energ. izd-vo, 1951.

Monthly List of Russian Accessions, Library of Congress, June, 1952. UNCLASSIFIED.

NITSKEVICH, Ye.A.

The Recuperative Steel-Melting Furnace. E. A. Nizkewitsch. (*Met. u. Giesserei Techn.*, 1931, 1, Oct., 299–306; *Fuel Economy* (Moscow), 1931, 8, Feb. 2). The author shows that, from the point of view of thermodynamics, the regenerative furnace is far superior to the open-hearth regenerator furnace. The installation of a circular steel radiation recuperator immediately behind the hearth, to ensure air preheating from 350° to 900° C. of a tubular steel corrector to ensure preheating to 350° C, and of a steam superheater is advocated.

C a
1951

9

Recuperative steelmelting furnace. E. A. Nitskevich. *Za Ekon Topliva* 8, No. 2, 1-10(1951).—A comparison between regenerative and recuperative furnaces favors the latter. Among the advantages of a recuperative furnace are: lower (by 10-15%) fuel consumption, smaller dimensions of furnace, reduction of leaks, easier control of combustion, and a more stable temp. in the work space. In addn., powd. fuel can be used in a recuperative furnace. Of the possible recuperative systems the most advantageous is one having a circular radiative recuperator of high-temp. sheet steel placed behind the melting chamber and capable of preheating the air from 350 to 900°; a tubular convective recuperator of C steel placed behind all the heat-utilizing units and capable of preheating the air to 350°. Between the two is placed a steam-generating unit. M. Hoseh

Fuel Abstracts

Preparation - C

3200. PREPARATION AND USE OF FINELY GROUND PULVERIZED FUEL.
Nitskevich, E.A. (Za. Ekon. Topliva (Fuel Econ.), May 1952, 9-11).
When fuel and air pass through a ball mill and are then separated in a cyclone, the finest particles remain in the air. A scheme is presented for using them separately, e.g., in a gas turbine. (L)

NITSKEVICH, YE. A.

Open-Hearth Process

Regenerative steel furnace., Za ekon. top. no. 2, 1952

Monthly List of Russian Accessions, Library of Congress, March 1952. Unclassified.

NITSKEVICH, YE. A. (Engineer)

Coal, Pulverized

Preparation and use of coal dust from fine milling. Za ekon. top. 9 no. 5 (1952)

Monthly List of Russian Accessions, Library of Congress, August 1952 UNCLASSIFIED.

NITUSHKIN, YE. A.

Electric Power

Economical use of electric power by industrial heat utilizing installations, Prom. energ. 9, No. 5, 1952

Monthly List of Russian Accessions, Library of Congress, August, 1952. UNCLASSIFIED.

NITSKEVICH, Ye. A.

Blast Furnaces

Steel recovery hot-blast stoves of a blast furnace draft. Za ekon. top. 9, no. 6, June 1952.

9. Monthly List of Russian Accessions, Library of Congress, August 1953, Uncl.

NITSKEVICH, YE. A.

Boilers

"Planning and development of boiler installations." Ye.A. Nitskevich. Reviewed by L.I. Gladkov and others. Izv. VTI, 21, No. 5, 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 1952 ~~1953~~, Uncl.

NITSKEVICH, Yevgeniy Arkad'yevich; MURZAKOV, V.V., redaktor; NEPOMNYASHCHIY, E.V., redaktor; ATTOPOVICH, M.K., tekhnicheskiy redaktor.

[Use of fuel in iron industry] Ispol'zovanie topliva v chernoi metallurgii. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1954. 622 p. [Microfilm] (MLRA 8:5)
(Iron industry)

Nitskevich, Ye. A.

137-1957-12-23358

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 12, p 73 (USSR)

AUTHOR: Nitskevich, Ye. A.

TITLE: Methods of Raising the Temperature of the Air-Blast and Trends in the Design of High-Temperature Blast-Heaters (Puti povysheniya temperatury nagreva dut'ya i napravleniya v proyektirovanii vysokotemperaturnykh vozdukhonagrevateley)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii, 1956, Vol 8, pp 357-378

ABSTRACT: The heat capacity of blast heaters (BH) may be improved by increasing the velocity of the gases which heat the checkers and of the heated air-blast to 2-3 and 6-9 m/sec, respectively, in order to raise the heat transfer coefficient; employing a heat recuperator to utilize the heat of the gases which escape from the BH at a temperature of 550-600° for the purpose of heating the air and the combustion gases to temperatures of 350° and 450° respectively; raising the initial temperature of the combustion products to 1450-1500°, and employing highly refractory brick in the upper zones of the checkers work; installing flameless burners for the burning of gases and

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137-1957-12-23358

Methods of Raising the Temperature of the Air Blast Trends (cont.)

utilizing larger ventilators. The temperature difference in the checkers may be increased three-fold by pre-heating the gas. Excessively high temperatures in the combustion chamber may be prevented by equipping the chamber with evaporators and steam superheaters, designed to heat to 450°-500° the steam used for the humidification of the blast. The Author suggests that new blast-heater designs be based on the following conditions: the blast rate: 3.5 nm^3/min for each m^3 of useful space of the blast-furnace; the blast temperature: 1100-1200°; the blast pressure: 2.8-3.0 atu; the blast should be humidified by superheated steam at 450-500° at a rate of 50-60 g/nm^3. The operation of recuperating steel BH's is discussed in the light of data obtained from Swedish practice, and a design of a combined radiation-convection BH is proposed for the purposes of heating the blast to 700-750°. Also suggested is a system of a two-stage recuperative-regenerative BH, capable of heating the blast economically within a range of 300-1150°.

L. Kh.

Card 2/2

1. Blast furnaces-Temperature control 2. Gases-Velocity control
3. Refractory materials-Applications

NITSKEVICH, Ye.A., redaktor; SAZANOV, B.V., redaktor; LANOVSKAYA, M.R., redaktor izdatel'stva; MERLOV, A.P., tekhnicheskiy redaktor.

[Waste-heat boilers used with open-hearth furnaces; a collection of articles] Kotly-utilizatory martenovskikh pechei; sbornik statei Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 229 p. (MIRA 10:5)
(Waste heat) (Boilers)

HITSKEVICH, Ye.A., inzh.

Complex utilization of the heat of waste gases and cooling water in open-hearth furnaces at metallurgical plants of the German Federal Republic. Biul. TSNIICHM no.15:19-22 '57. (MIRA 11:5)
(Germany, West--Open-hearth furnaces)

MITSKEVICH, Yu.A., referent.

A new gas-turbine unit for ferrous metallurgical plants. Mul. TSNIICHM no.16:58 '57. (MIRA 11:5)
(Metallurgical plants--Equipment and supplies)
(Gas turbines)

NITSKEVICH, Ye.A., referent

Evaporation cooling of open-hearth furnaces. Biul.TSNIICHM no.17:50-52 (325) '57. (MIRA 11:4)

(Open-hearth furnaces) (Cooling)

NITSKEVICH, Ye.A., inzh.

Purification of exhaust gases in open-hearth furnaces abroad.
Biul. TSNIICHM no.21:1-7 '57. (MIRA 11:5)
(Open-hearth furnaces)

NITSKEVICH Ye.A.

NITSKEVICH, Ye.A., referent.

Air preheaters using coal dust (from foreign journals). Biul. TSNIICHM no.23:57-60 '57. (MIRA 11:2)
(Germany, West--Air preheaters)

NITSKEVICH, Ye.A., referent.

Combined production of gas and electric power. Biul. TSNIICHM no.1: 58-60 '58. (MIRA 11:5)
(Electric power plants) (Gas power plants)

NITSKEVICH, Ye.A., inzh.

Use of natural gas in open-hearth furnaces abroad. Biul. TSNIICHM no.4:12-21 '58. (MIRA 11:5)
(Gas natural) (Open-hearth furnaces)

NITSKEVICH, Ye.A.

New pumps used in recuperators with forced circulation. Biul. TSNIICHM no.4:61 '58. (MIRA 11:5)
(Pumping machinery)

NITSKEVICH, Ye.A., referent

Gas turbine equipment in metallurgical plants abroad (from "Brown Boveri Mitteilungen" nos. 4 - 5 1957). Biul. TSNIICHM no.7:60-61 '58. (MIRA 11:6)

(Gas turbines)

KUNAKOV, Nikolay Yevgen'yevich; NITSKEVICH, Ye.A., red.; VAGIN, A.A., red.izd-va; ATTOPOVICH, M.K., tekhn.red.

[Expansion of the production and use of gas in metallurgical plants] Razvitie gazovogo khoziaistva metallurgicheskikh zavodov. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1959. 210 p. (MIRA 12:4)
(Metallurgical plants)

NITSKEVICH, Yevgeniy Arkad'yevich; FRIDMAN, I.M., red.; LANOVSKAYA, M.R., red.izd-va; KARASEV, A.I., tekhn.red.

[Ferrous metallurgy of capitalist nations] Chernaia metallurgiia kapitalisticheskikh stran. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii. Pt.10. [Heat engineering] Teploenergetika. 1960. 456 p. (MIRA 13:10)

1. Moscow. TSentral'nyy institut informatsii chernoy metallurgii. (Steel industry)

NITSKEVICH, Ye.A., referent

Burners for firing open-hearth furnaces with fuel oil and cold coke gas [from "Stahl and Eisen," no.21, 1959]. Biul. TSIICHM no.10: 52-54 '60. (MIRA 15:4)
(Germany, West--Open-hearth furnaces--Equipment and supplies)

NITSIEVICH, Ye.A., referent

Saving fuel in metallurgical plants, in England [from British journals]. Biul. TSIICHM no.1:61 '61. (MIRA 14:9)
(Great Britain--Metallurgical plants)

NITSKEVICH, Ye.A., dots.; KIREVSKIY, G.N., inzh., nauchnyy red.; FRIDMAN, I.M., insh., nauchnyy red.; SAZANOV, B.V., dots., nauchnyy red.; YUSHKOV, S.B., insh., nauchnyy red.; FILIP'YEV, O.V., kand. tekhn. nauk, nauchnyy red.; VESELKOV, N.G., insh., nauchnyy red.; TARNAVSKIY, I.L., inzh., nauchnyy red.; IVANOVA, A.N., insh., red.; ZABAZLAYEVA, E.I., red.; LANOVSKAYA, M.R., red. izd-va; DOBUZHINSKAYA, L.V., tekhn.red.

[Heat engineering]Teploenergetika [By]E.A.Nitskevich. Pod red. A.N.Ivanova. Moskva, Metallurgizdat, 1962. 348 p. (MIRA 16:2)

1. Moscow. TSentral'nyy institut informatsii chernoy metallurgii. (Metallurgical furnaces) (Power engineering)

PERLOV, N.; NITSKEVICH, Ye.

Efficient utilization of converter gas. Metallurg 10 no.3:21-22 Mr '65. (MIRA 18:5)

15 (8) PHASE I BOOK EXPLOITATION SOV/2056

Nitskevich, Z.A., V.T. Pirogova, and Ye. A. Levitas

Plasticheskiye massy na osnove poliamidnykh smol; obzor otechestvennoy i zarubezhnoy literatury (Plastics From Polyamide Resins; Review of Domestic and Foreign Literature) Kiyev, 1958. 36 p. 2,000 copies printed.

Sponsoring Agencies: Ukraine. Gosudarstvennaya planovaya komissiya, and Nauchno-issledovatel'skiy institut mestnoy i toplivnoy promyshlennosti.

Resp. Ed.: A.I. Shapiro.

PURPOSE: This brochure is intended for industrial chemists, technologists and other persons concerned with synthetic materials.

COVERAGE: The brochure presents data on the properties and uses of polyamide resins including methods of utilizing them as casting

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materials. There are 16 references: 8 Soviet, 3 English and 5 German. No personalities are mentioned.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

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NITSKUS, I. I.

NITSKUS, I. I.: "The development of production methods and studying the properties of cast structural material of fuel slag from the Kaunas Electric Power Station". Sverdlovsk, 1955. Min Higher Education USSR. Ural Polytechnic Inst imeni S. M. Kirov. (Dissertations for the degree of Candidate of Technical Science.)

SO: Knizhnaya Letopis' No. 50 10 December 1955. Moscow.

NITSLAVSKAYA, Ye.

Volunteers of the health army. Sov. profsoiuzy 18 no.19:36-37 O '62. (MIRA 15:9)

1. Starshiy inspektor-vrach otdela Vsesoyuznogo tsentral'nogo soveta professional'nykh soyuzov po gosudarstvennomu sotsial'nomu strakhovaniyu.
(Public health) (Community life)

NITSMANE, A. K.

NITSMANE, A. K. -- "Hidden form of Mastitis As A Source of Infection of Healthy Cows in the Latvian SSR." Latvian Agricultural Academy, 1955. In Latvian (Dissertation for the Degree of Candidate of Veterinary Sciences)

SO: Izvestiya Ak. Nauk Latviyskoy SSR, No. 9, Sept., 1955

NITSOLOVA, S.

Device for collecting motion. Mat i fiz Bulg 7 no. 2:58
My-Je '64.

NITSOLOVA, S. (Sofia)

Teaching rotary motion of solids in 9th grade. Mat i fiz Bulg 7 no.4:29-34 Jl-Ag '64.

NITSOLOVA, S. (Sofia)

For interesting and well-considered review of lessons in physics.
Mat i fiz Bulg 7 no.6:25-30 N-D '64.

NITSOLOVA, S. St. (Sofia)

Iakov Il'ich Frenkel', 1894-1952. Mat i fiz Bulg 7 no.5:50-52 '64.

NITSOLOVA, S. St. (Sofiia)

On the independent work of pupils in physics in the 8th grade. Pt. 2. Mat i fiz Bulg 7 no. 1: 21-26 Ja-F '64.

1. Zam. gl. redaktor, "Matematika i fizika".

NITSOLOVA, S. St.

A new device in mechanical engineering. Mat i fiz Bulg 7 no. 2: 62-63 '64.

1. Deputy Chief Editor, "Matematika i fizika".

NITSOLOVA, S.St. (Sofiia)

Teaching on the subject "Electric current in semiconductors" in the 11th grade. Mat i fiz Bulg 5 no.5:28-35 S-O '62.

1. Chlen na Redaktsionnata kolegiia, "Matematika i fizika".

NITSOLOVA, S. st.

Conference on the methods in physics, held in Prague June 2-4, 1962. Mat i fiz Bulg 5 no.6:57-58 N-D '62.

1. Chlena na Redaktsionnata kolegiia, "Matematika i fizika".

NITSOV, M. (Bolgariya)

Bulgaria, country of health resorts. Vop. kur., fizioter. i lech. fiz. kul't. 26 no.4:358-362 Jl-Ag '61. (MIRA 15:1)
(BULGARIA--HEALTH RESORTS, WATERING PLACES, ETC.)

IANCHEVA, B.; DANOV, At.; ZHELEVA, M.; NITSOVA, P.; KHRISTANOVA, Tsv.; MESARSKI, N.; MIRCHEVA, M.

Antigenic content and immunogenic activity of typhous suspensions obtained through submerged cultivation with aeration. Nauch trud Inst kontrol lek 1:21-29 '63.

1. Scientific Research Institute for the State Control of Drugs, Sofia (for IAncheva, Danov, Zheleva, and Nitsova). 2. Scientific Research Institute of Epidemiology and Microbiology, Sofia (for Khristanova, Mesarski, and Mircheva).

SOV/81-59-10-34056

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 10, p 32 (USSR)

AUTHOR: Nitsovich, M.V.

TITLE: The Theory of the Diamagnetism of Electronic Gas in Crystals

PERIODICAL: Nauk. zap. Chernivets'k. un-t, 1958, Nr 34, pp 67-77 (Ukrainian)

ABSTRACT: The statistical sum of an electronic gas being in the magnetic field is considered with an accuracy up to the terms of the H^2 order. Feynman's procedure for disentangling the operators is used. The expression for the stationary part of the tensor of the magnetic susceptibility of the electronic gas has been obtained. This expression consists of the following parts: the principal part coinciding with Peierds-Wilson's formula in the isotropic case (Peierds, R., Z. Phys., 1933, Vol 80, p 763; Wilson, A., Kvantovaya teoriya metallov. OGIZ, 1941), the part which is analogous to the atomic diamagnetism (it corresponds to Wilson's formula in the anisotropic case) and several other terms.

A. Almazov

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SOV/126--7-5-1/25

AUTHOR: Nitsovich, M. V.

TITLE: On the Theory of the Diamagnetism of an Electron Gas in Crystals (K teorii diamagnetizma elektronnogo gaza v kristallakh)

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol. 7, Nr 5, pp 641-649 (USSR)

ABSTRACT: A new derivation of the formula for the diamagnetic susceptibility of an electron gas is given. This derivation is claimed to be more general than those given in Refs 1-4. This is done by calculating the statistical sum for an electron gas placed in a magnetic field. All the terms proportional to H^2 and an exact expression for the diamagnetic susceptibility of an electron gas have been found. The results are applicable to any anisotropic crystal. The magnetic susceptibility tensor consists of 5 parts, as follows: 1) This part is identical with the formula given by Peierls and Wilson (Ref 3) for the isotropic case. 2) This part is analogous to "atomic diamagnetism" and is a generalization of the Wilson formula (Ref 3) to the anisotropic case. It is of the form:

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On the Theory of the Diamagnetism of an Electron Gas in Crystals

$$-\frac{e^2}{8mc^2}\int f(E)\,(\delta_{\alpha\rho\nu}\,\delta_{\alpha\gamma\nu'}+\delta_{\alpha\gamma\nu}\,\delta_{\alpha\rho\nu'})\sum_n\int\frac{\partial u_n^*}{\partial k_\nu}\frac{\partial u_n}{\partial k_{\nu'}}\,d\tau\,dk \quad .$$

3) A term of the form:

$$\frac{\pi^2e^2}{2h^2c^2}\int dk\sum\frac{\partial f}{\partial E_n}\,(\delta_{\alpha\rho\nu}\delta_{\alpha\gamma\nu'}+\delta_{\alpha\gamma\nu}\,\delta_{\alpha'\rho\nu'})$$

$$\frac{\partial E_n}{\partial k_\nu}\frac{\partial E_n}{\partial k_{\nu'}}\int\frac{\partial u_n^*}{\partial k_\alpha}\frac{\partial u_n}{\partial k_{\alpha'}}\,d\tau$$ which is small.

4) A part containing $[\vec{\Omega}\,\vec{\Omega}]_{nn}$. These terms are zero in all real cases.

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On the Theory of the Diamagnetism of an Electron Gas in Crystals

5) This part contains terms which cannot be summed up and although they are small their effect cannot be estimated. The complete expression is given in Eq (5.4). Acknowledgment is made to Professor A. G. Samoylovich. There are 7 references, of which 4 are Soviet, 1 is German and 2 English.

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ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University)

SUBMITTED: November 28, 1956, after revision May 13, 1957

NITSOVICH, M. V., Cand Phys-Math Sci -- (diss) "Theory of the diamagnetism of electron gas in crystals." Chernovtsy, 1960. 7 pp; (Ministry of Higher and Secondary Specialist Education Ukrainian SSR, Chernovtsy State Univ, Chair of Semiconductor Physics); 150 copies; price not given; bibliography at end of text (10 entries); (KL, 17-60, 140)

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AUTHORS: Samoylovich, A. G., Nitsovich, M. V.

TITLE: The Problem of Magnetic Susceptibility of Metallic Lithium

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 2, pp. 371-373

TEXT: The present article is a continuation of a previous paper (Ref. 1)* in which general expressions were deduced for the orbital magnetic susceptibility of an electron gas in a crystal. These expressions are here employed for calculating the magnetic susceptibility of metallic lithium. Pines (Ref. 2) has already analyzed the experimental data obtained for lithium, and he represented them theoretically by the formula $\chi_o = \chi_s + \chi_d + \chi_a$; here, χ_o denotes the total magnetic susceptibility, χ_s the paramagnetic spin susceptibility with regard to electronic interaction, χ_a the atomic diamagnetic susceptibility, and χ_d the diamagnetic susceptibility of the conduction electrons. The author now attempts to give a better description of the experiments, and he demonstrates his method by the example of lithium. He sets $\chi = \chi_1 + \chi_2 + \chi_3 + \chi_4 + \chi_5$ for

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* Fizika metallov i metalloveden'ye, 1959, Vol. 7, No. 5, pp 641-649 (USSR)